



ISSN: 0975-833X

Available online at <http://www.journalcra.com>

INTERNATIONAL JOURNAL  
OF CURRENT RESEARCH

International Journal of Current Research

Vol. 17, Issue, 01, pp.31560-31562, January, 2025  
DOI: <https://doi.org/10.24941/ijcr.48418.01.2025>

## RESEARCH ARTICLE

### CASE REPORT: ENDOMETRIOSIS IN THE LUNG PARENCHYMA

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#### ARTICLE INFO

##### Article History:

Received 20<sup>th</sup> October, 2024

Received in revised form

17<sup>th</sup> November, 2024

Accepted 24<sup>th</sup> December, 2024

Published online 31<sup>st</sup> January, 2025

##### Key Words:

Tomography;  
Endometriosis;  
Pulmonary Endometriosis.

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#### ABSTRACT

Endometriosis is a common chronic gynecological condition that manifests itself in three ways: superficial, ovarian, and deep endometriosis. It is more common in young women, with the most common symptoms being infertility, pelvic pain and cyclical dysmenorrhea, chronic pelvic pain, and abdominal or pelvic pain. This article aims to report an atypical and rare case of pulmonary manifestation of endometriosis. This is a female patient with cyclical respiratory symptoms and catamenial intercourse. The tomographic study was performed in three stages: initial evaluation, period between menstrual cycles, and a new menstrual cycle, which revealed probable pulmonary involvement by endometriosis. Thoracic involvement by endometriosis is rare, and reports of pulmonary parenchymal involvement by endometriosis are even rarer. However, it is essential to understand the prevalence of endometriosis, including the possibility of pulmonary involvement, and diagnostic evaluation by chest computed tomography should always be considered in this suspicion.

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Citation: Levi Carvalho e Silva, Rinelle Maria Martins Costa, Franciane Melo Meireles, Lyvia Gonçalo da Silva, Felipe Gomes do Nascimento, Daniel Gurgel Fernandes Távora and Francisco Barbosa de Araújo Neto. 2025. "Case Report: Endometriosis In The Lung Parenchyma". *International Journal of Current Research*, 17, (01), 31560-31562

## INTRODUCTION

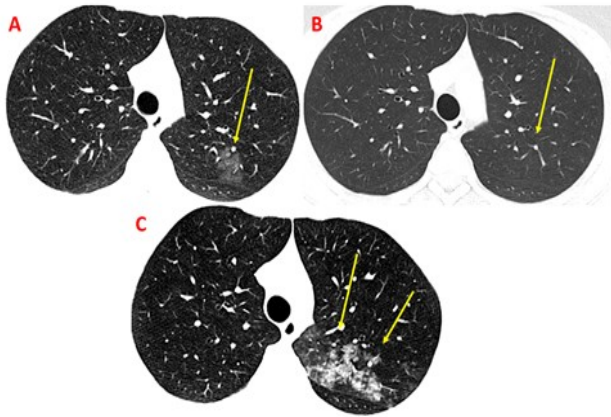
Endometriosis is a common chronic gynecological condition defined as the presence of functional endometrial glands or similar lesions outside the uterus (1). It manifests itself in three ways: superficial (peritoneal) endometriosis, ovarian endometriosis (endometrioma) and deep endometriosis. The size ranges from microscopic implants to large cysts (endometriomas) and nodules. Deep endometriosis is still a complex and challenging topic for clinics, surgery and radiology. Endometriosis presents in young women, with an average age of diagnosis of 25 to 29 years. Symptoms include infertility/subfertility, pelvic pain including dyspareunia, cyclical dysmenorrhea, chronic pelvic pain, abdominal or pelvic pain associated with menstruation (cyclical or not), gastrointestinal involvement: catamenial diarrhea, rectal bleeding and constipation, bladder involvement: urgency, frequency, hematuria, or asymptomatic, especially if the disease is isolated in the peritoneum (2).

## OBJECTIVE AND METHOD

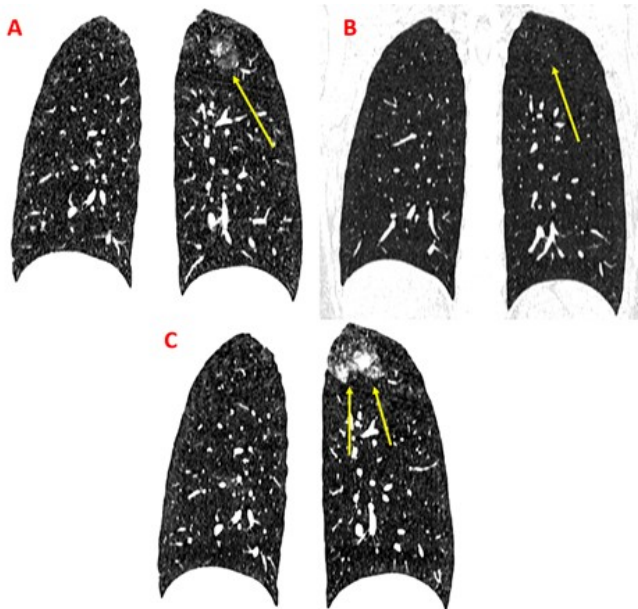
To report a case of pulmonary manifestation of endometriosis.

## CASE REPORT

Female patient, 29 years old, presenting with chronic pelvic pain. Clinically evaluated and investigation with ultrasound mapping of deep endometriosis indicated. IN 2019, mapping was carried out, which showed endometrioma in the right ovary, this one with reduced mobility, in addition to hypoechoic thickening reaching the anterior wall of the rectosigmoid, promoting an intestinal nodule that affects from the serosa to the muscularis, 10.7 cm from the anal verge, measuring 2.3 x 1.1 x 1.2 cm, compromising around 41% of the strap's circumference. She underwent surgical treatment in 2020, whose histopathological results showed endometriosis in the appendix, rectum, bladder peritoneum, right ovary, right parametrium and high rectum. The patient developed persistent pelvic pain after the surgical procedure, using Gestodene + Ethinylestradiol (75 + 30 mcg), with no new surgical indications. In 2023, the patient developed a progressive cough with hemoptysis during the menstrual period, being evaluated again and pulmonary investigation with chest tomography indicated. The chest tomography performed on 06/16/2023 showed poorly defined opacities with ground-glass attenuation in the apicoposterior segment of the left upper lobe, of indeterminate appearance. The possibility of focal pulmonary

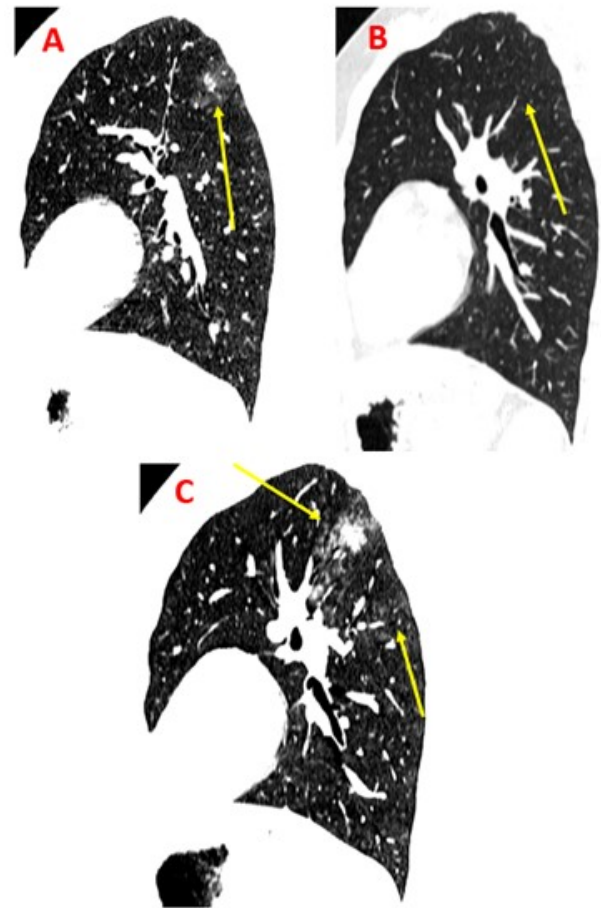


**Figure 1.** In this image, we have axial CT scans, with a lung window, performed on different dates, demonstrating that in the menstrual period of April 2023, a pulmonary infiltrate with ground-glass attenuation (yellow arrows) was visible in the apicoposterior segment of the upper lobe of the left lung (A), no longer seen in the June 2023 examination, which was outside the menstrual period (B). In the July 2023 examination, within another menstrual period (C), we again evidenced the pulmonary infiltrates with ground-glass attenuation, in the upper lobe of the left lung, now in greater quantity than in the April 2023 examination

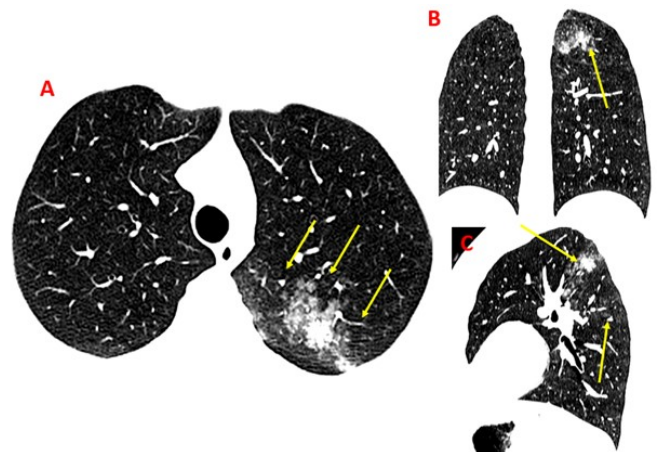


**Figure 2.** In this image, we have coronal CT scans, with a lung window, performed on different dates, demonstrating that in the menstrual period of April 2023, a pulmonary infiltrate with ground-glass attenuation (yellow arrows) was visible in the upper lobe of the left lung (A), no longer seen in the June 2023 exam, which was outside the menstrual period (B). In the July 2023 exam, within another menstrual period (C), we again evidenced the pulmonary infiltrates with ground-glass attenuation, in the upper lobe of the left lung, now in greater quantity than in the April 2023 exam

alveolar hemorrhage was raised and a new CT scan was suggested outside the menstrual period (15-20 days after the first day of menstruation), to better evaluate the hypothesis of pulmonary endometriosis. The suggested control examination was carried out on 07/04/2023, and the changes identified in the previous examination were not characterized. A third chest tomography was also performed to confirm these findings on 07/15/2023, carried out during a new menstrual period, completing the tomographic series in the menstrual, pre-menstrual and new menstrual cycle, again showing ill-defined

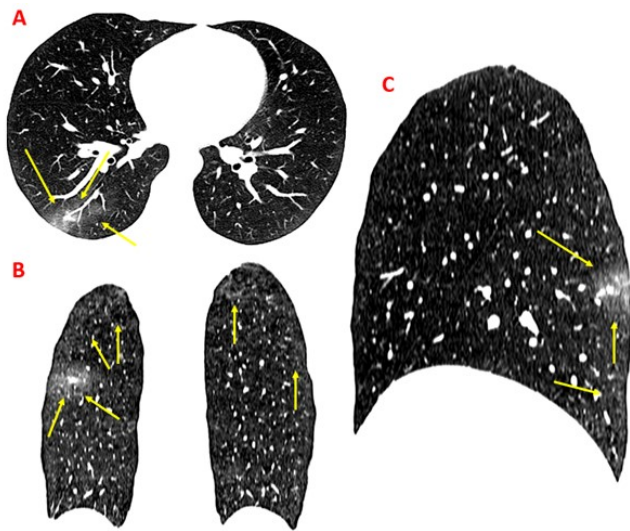


**Figure 3.** In this image, we have sagittal CT scans, with a lung window, performed on different dates, demonstrating that in the menstrual period of April 2023, a pulmonary infiltrate with ground-glass attenuation (yellow arrows) was visible in the upper lobe of the left lung (A), no longer seen in the June 2023 exam, which was outside the menstrual period (B). In the July 2023 exam, within another menstrual period (C), we again evidenced the pulmonary infiltrates with ground-glass attenuation, in the upper lobe of the left lung, now in greater quantity than in the April 2023 exam



**Figure 4:** In this image, we have the patient's tomography performed in July 2023, with a lung window, in axial (A), coronal (B) and sagittal (C) sections, in which we highlight in the yellow arrows the pulmonary infiltrates with ground-glass attenuation in the upper lobe of the left lung, suggesting local inflammation and alveolar hemorrhage, considering that the patient was in the menstrual cycle.

opacities. with ground-glass attenuation with predominant distribution in the apicoposterior segments of the left upper lobe and posterior basal of the right lower lobe, but also present in the upper segments of the lower lobes. The set of



**Figure 5.** In this image, we have the patient's tomography performed in July 2023, with a lung window, in axial (A), coronal (B) and sagittal (C) sections, in which we highlight in the yellow arrows the pulmonary infiltrates with ground-glass attenuation also affecting the right lung, in addition to the left, already reported in other images, demonstrating that the patient had evolved with greater pulmonary involvement in relation to the examination in April 2023

findings, in accordance with the tomographic control and the patient's clinical condition, favor the hypothesis of secondary pulmonary involvement due to endometriosis. Thoracic involvement by endometriosis is a rare entity. The symptoms that suggest it are manifested by pleuritic chest pain, pneumothorax, pleural effusions or cyclic hemoptysis, generally in the context of long-standing pelvic endometriosis (> 5 years). The current prevalence is around 3-6%, however it is believed that this prevalence may be underestimated (3). It consists of a form of extrapelvic endometriosis found in lung parenchymal tissues or in the pleura. It most frequently manifests as catamenial pneumothorax, reflecting its temporal relationship with menstruation, however reports of pulmonary parenchymal involvement by endometriosis are rare (4).

## CONCLUSION

It is essential to understand the prevalence of endometriosis and know the etiopathogenesis of the disease, as well as its diagnosis and treatment, understanding the disease with a broad spectrum that must include a systematic approach, including the possibility of pulmonary involvement in the differential diagnoses of different lung pathologies in women, to avoid potentially serious complications and reduce the negative impact on the quality of life of affected patients (5).

Chest CT is the modality of choice for the imaging evaluation of thoracic endometriosis, which can demonstrate the presence of pneumothorax, hemothorax, or nodules that may change in nature cyclically, and can also be used to provide guidance for targeted biopsy (6). Imaging should be performed during menstruation for greater sensitivity.

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